

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application:

Listing of Claims

1-13. (Cancelled)

14. (New) An amplifier circuit, comprising:

at least one transconductor device connected to at least one phase shifter section with an adjustable phase shift and an impedance at least partially dependent on the frequency of an input signal, wherein in use said adjustable phase shift is adjusted to have substantially the opposite value of a phase shift of said transconductor device, wherein said phase shifter section comprises at least one capacitor device and at least one adjustable resistor device, said adjustable resistor device comprises an amplifier device including:

at least one input contact for receiving a resistance control signal;

a first output contact connected to at least one of said capacitor devices;

and

a second output contact connected to said transconductor device; and,

wherein said amplifier circuit further comprises a control device for providing said resistance control signal to said input contact.

15. (New) The amplifier circuit as recited in claim 14, wherein said amplifier device in the adjustable resistor device is substantially equivalent to said transconductor device.

16. (New) The amplifier circuit as recited in claim 14, wherein said transconductor device is a transistor.

17. (New) The amplifier circuit as recited in claim 14, wherein said amplifier device in the adjustable resistor device is a transistor.

18. (New) The amplifier circuit as recited in claim 16, wherein at least one of said transistor devices is a Metal Oxide Semiconductor Field Effect Transistor.

19. (New) The amplifier circuit as recited in claim 14, wherein said control device comprises a voltage controlled oscillator.

20. (New) The amplifier circuit as recited in claim 19, wherein the control device further comprises an amplifier.

21. (New) The amplifier circuit as recited in claim 20, wherein the voltage controlled oscillator circuit comprises at least two oscillator transconductor devices substantially similar to said transconductor device.

22. (New) A gyrator circuit including at least one amplifier circuit as recited in claim 14, further comprising:

at least one amplifier device having an input contact connected to an output contact of the transconductor device in said amplifier circuit, wherein said at least one amplifier device has a gain substantially the inverse of the gain of the amplifier device in said amplifier circuit.

23. (New) A filter device comprising at least one in-phase input and at least one in-phase output, and at least one gyrator circuit as recited in claim 22 connected to said in-phase input and said in-phase output.

24. (New) The filter device as recited in claim 23, further comprising:
at least one phase shifted input;
at least one gyrator device as recited in claim 9 connected to said phase shifted input; and,
at least one phase shifted output connected to said gyrator device.

25. (New) The filter device as recited in claim 24, further comprising:

at least a first gyrator device connected to said in-phase input and said phase shifted input; and,

at least a second gyrator device connected to said in-phase output and said phase shifted output.

26. (New) A method for amplifying an input signal, comprising the steps of:

generating a signal current based on a voltage of an input signal;

adjusting a phase shift of a resistor device to substantially the opposite of a phase shift of said signal current generated in said generating step, said resistor device having an adjustable phase shift and an impedance at least partially dependent on the frequency of an input signal;

presenting the signal current to a capacitor device; and

presenting the current to said resistor device.